

NOTICE

All drawings located at the end of the document.

**INDUSTRIAL AREA
SAMPLING AND ANALYSIS PLAN
FY03 ADDENDUM #IA-03-07
IHSS GROUP 500-2**

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SAMPLING AND ANALYSIS PLAN
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IHSS GROUP 500-2**

Approval received from the Colorado Department of Public Health and Environment

June 6, 2003

Approval letter contained in the Administrative Record

June 2003

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ACRONYMS

FY	Fiscal Year
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
MDL	method detection limit
mg/kg	milligrams per kilogram
N/A	not applicable
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
SAP	Sampling and Analysis Plan
ug/kg	microgram per kilogram
VOC	volatile organic compound

1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001) Addendum #IA-03-07 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for IHSS Group 500-2. IHSS Group 500-2 consists of a single IHSS, IHSS 158, Building 551 Radioactive Site. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for IHSS 158. The location of IHSS 158 is shown on Figure 1.

1.1 EXISTING CHARACTERIZATION INFORMATION

Concentrations and activities detected above the background mean plus two standard deviations, or method detection limit (MDL), are presented on Figure 2. Existing information and data for this IHSS are available in Appendix C of the IASAP (DOE 2001), the Historical Release Report (HRR) (DOE 1992- 2002), and the Industrial Area Data Summary Report (DOE 2000). PCOCs for this IHSS include radionuclides, metals, and volatile organic compounds (VOCs) in surface and subsurface soils as presented in Table 1.

Analyte concentrations and radionuclide activities above background means plus two standard deviations or MDLs for existing analytical data, are presented on Figure 2. Table 2 presents these PCOCs. Results from eight locations indicated radionuclides, primarily americium-241 and plutonium-239/240, greater than background mean plus two standard deviation activities. Metal concentrations were greater than background mean plus two standard deviations at eight locations. Volatile organic compounds were not analyzed for in IHSS 158.

2.0 IHSS GROUP 500-2 SAMPLING

The proposed sampling specifications (number and types of samples) for IHSS 158 are listed in Table 2 and Figure 3. Proposed new sampling locations are the starting point for this IHSS characterization. After characterization starts, the number and type of samples may change based on sampling results. Changes to sampling specifications will be considered in consultation with the regulatory agencies.

Three types of sampling strategies are used to determine sampling locations: statistical, geostatistical, and biased. Statistical grids have computer-generated random start points and orientations. Additionally, the grids extend outside the IHSS, PAC, or UBC Site to provide additional sampling locations if needed. Biased samples may be added based on existing data coverage to supplement the statistical grid locations.

A statistical grid was selected to determine sampling locations for IHSS 158. The grid dimension is 11 meters in accordance with the IASAP (DOE 2001); however a 22-meter grid was used at Building 551. Where a new sampling location overlaps or is adjacent to an existing sampling location, the existing sampling location data will be used during evaluation. Statistical sampling locations within a building footprint may be adjusted in the field to collect samples from specific building features.

Two biased sampling locations (CA42-030 and CA42-031) were selected to characterize retention pond associated with Building 553. The retention pond was identified on an engineering drawing (08926-002) and is located near the southeastern corner of Building 553.

Additionally, two biased sampling locations (CA42-032 and CA42-033) were selected to characterize the Building 553 north and south docks. The sampling specifications for IHSS Group 500-2 are summarized in Table 3.

3.0 REFERENCES

DOE, 1992-2002, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado.

DOE, 2000, Rocky Flats Environmental Technology Site Industrial Area Data Summary Report, Golden, Colorado, September.

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

Table 1
Potential Contaminants of Concern IHSS Group 500-2

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Data Source	Sampling Location Method
500-2	IHSS 158 – Building 551 Radioactive Site	Radionuclides Metals VOCs	Surface and Subsurface Soil	HRR (DOE 1992-2002) Process knowledge (IASAP [DOE 2001]) IA Data Summary Report (DOE 2000)	Statistical and Biased

Table 2
Sampling Specifications IHSS Group 500-2

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
500-2	IHSS 158 – Building 551 Radioactive Active									
		BZ40-003	2082667.624	749560.344	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ40-003	2082667.624	749560.344	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ40-003	2082667.624	749560.344	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		BZ40-003	2082667.624	749560.344	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ40-003	2082667.624	749560.344	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ40-003	2082667.624	749560.344	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ41-006	2082671.968	749760.737	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-006	2082671.968	749760.737	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ41-006	2082671.968	749760.737	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		BZ41-006	2082671.968	749760.737	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-006	2082671.968	749760.737	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ41-006	2082671.968	749760.737	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ41-007	2082676.796	749725.062	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-007	2082676.796	749725.062	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ41-007	2082676.796	749725.062	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		BZ41-007	2082676.796	749725.062	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		BZ41-007	2082676.796	749725.062	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ41-007	2082676.796	749725.062	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ41-008	2082681.623	749689.387	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-008	2082681.623	749689.387	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ41-008	2082681.623	749689.387	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		BZ41-008	2082681.623	749689.387	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-008	2082681.623	749689.387	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ41-008	2082681.623	749689.387	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ41-009	2082686.451	749653.712	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-009	2082686.451	749653.712	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ41-009	2082686.451	749653.712	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		BZ41-009	2082686.451	749653.712	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-009	2082686.451	749653.712	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ41-009	2082686.451	749653.712	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ41-010	2082691.278	749618.037	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-010	2082691.278	749618.037	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ41-010	2082691.278	749618.037	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		BZ41-010	2082691.278	749618.037	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-010	2082691.278	749618.037	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ41-010	2082691.278	749618.037	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ41-011	2082696.105	749582.362	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-011	2082696.105	749582.362	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ41-011	2082696.105	749582.362	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		BZ41-011	2082696.105	749582.362	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ41-011	2082696.105	749582.362	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ41-011	2082696.105	749582.362	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ42-001	2082724.104	749840.448	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-001	2082724.104	749840.448	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ42-001	2082724.104	749840.448	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		BZ42-001	2082724.104	749840.448	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ42-001	2082724.104	749840.448	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ42-002	2082728.932	749804.773	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-002	2082728.932	749804.773	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ42-002	2082728.932	749804.773	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-002	2082728.932	749804.773	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ42-002	2082728.932	749804.773	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ42-003	2082733.759	749769.098	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-003	2082733.759	749769.098	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ42-003	2082733.759	749769.098	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-003	2082733.759	749769.098	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ42-003	2082733.759	749769.098	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ42-005	2082695.623	749818.43	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-005	2082695.623	749818.43	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ42-005	2082695.623	749818.43	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-005	2082695.623	749818.43	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ42-005	2082695.623	749818.43	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ42-009	2082667.141	749796.412	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-009	2082667.141	749796.412	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		BZ42-009	2082667.141	749796.412	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		BZ42-009	2082667.141	749796.412	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		BZ42-009	2082667.141	749796.412	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA40-014	2082857.823	749549.753	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA40-014	2082857.823	749549.753	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA40-014	2082857.823	749549.753	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA40-014	2082857.823	749549.753	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA40-014	2082857.823	749549.753	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-017	2082862.168	749750.146	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-017	2082862.168	749750.146	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		CA41-017	2082862.168	749750.146	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-017	2082862.168	749750.146	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-017	2082862.168	749750.146	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-018	2082866.995	749714.471	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-018	2082866.995	749714.471	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-018	2082866.995	749714.471	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-018	2082866.995	749714.471	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-018	2082866.995	749714.471	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-019	2082871.823	749678.796	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-019	2082871.823	749678.796	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-019	2082871.823	749678.796	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-019	2082871.823	749678.796	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-019	2082871.823	749678.796	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-020	2082876.65	749643.121	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-020	2082876.65	749643.121	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-020	2082876.65	749643.121	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-020	2082876.65	749643.121	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-020	2082876.65	749643.121	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-023	2082833.686	749728.128	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-023	2082833.686	749728.128	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-023	2082833.686	749728.128	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-023	2082833.686	749728.128	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-023	2082833.686	749728.128	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-024	2082838.514	749692.453	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-024	2082838.514	749692.453	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-024	2082838.514	749692.453	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-024	2082838.514	749692.453	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-024	2082838.514	749692.453	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-025	2082843.341	749656.778	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		CA41-025	2082843.341	749656.778	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-025	2082843.341	749656.778	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-025	2082843.341	749656.778	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-025	2082843.341	749656.778	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-026	2082848.168	749621.103	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-026	2082848.168	749621.103	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-026	2082848.168	749621.103	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-026	2082848.168	749621.103	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-026	2082848.168	749621.103	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-027	2082852.996	749585.428	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-027	2082852.996	749585.428	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-027	2082852.996	749585.428	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-027	2082852.996	749585.428	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-027	2082852.996	749585.428	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-028	2082800.377	749741.784	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-028	2082800.377	749741.784	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-028	2082800.377	749741.784	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-028	2082800.377	749741.784	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-028	2082800.377	749741.784	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-029	2082805.205	749706.11	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-029	2082805.205	749706.11	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-029	2082805.205	749706.11	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-029	2082805.205	749706.11	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-029	2082805.205	749706.11	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-031	2082814.859	749634.76	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-031	2082814.859	749634.76	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-031	2082814.859	749634.76	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical
		CA41-031	2082814.859	749634.76	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-031	2082814.859	749634.76	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		CA41-031	2082814.859	749634.76	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-032	2082819.687	749599.085	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-032	2082819.687	749599.085	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-032	2082819.687	749599.085	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-032	2082819.687	749599.085	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-032	2082819.687	749599.085	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-033	2082824.514	749563.41	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-033	2082824.514	749563.41	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-033	2082824.514	749563.41	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-033	2082824.514	749563.41	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-033	2082824.514	749563.41	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA41-034	2082767.068	749755.441	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-034	2082767.068	749755.441	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA41-034	2082767.068	749755.441	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA41-034	2082767.068	749755.441	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA41-034	2082767.068	749755.441	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA42-015	2082852.513	749821.495	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-015	2082852.513	749821.495	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA42-015	2082852.513	749821.495	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-015	2082852.513	749821.495	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA42-015	2082852.513	749821.495	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA42-016	2082857.341	749785.821	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-016	2082857.341	749785.821	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA42-016	2082857.341	749785.821	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-016	2082857.341	749785.821	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA42-016	2082857.341	749785.821	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA42-019	2082824.031	749799.477	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-019	2082824.031	749799.477	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA42-019	2082824.031	749799.477	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		CA42-019	2082824.031	749799.477	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA42-019	2082824.031	749799.477	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA42-020	2082828.859	749763.802	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-020	2082828.859	749763.802	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA42-020	2082828.859	749763.802	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-020	2082828.859	749763.802	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA42-020	2082828.859	749763.802	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA42-024	2082795.55	749777.459	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-024	2082795.55	749777.459	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA42-024	2082795.55	749777.459	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-024	2082795.55	749777.459	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA42-024	2082795.55	749777.459	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA42-026	2082757.413	749826.791	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-026	2082757.413	749826.791	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA42-026	2082757.413	749826.791	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-026	2082757.413	749826.791	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA42-026	2082757.413	749826.791	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		CA42-027	2082762.241	749791.116	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-027	2082762.241	749791.116	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical
		CA42-027	2082762.241	749791.116	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical
		CA42-027	2082762.241	749791.116	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical
		CA42-027	2082762.241	749791.116	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical
		BZ40-007	2082711.552	749549.746	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		BZ40-007	2082711.552	749549.746	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical under Building 551
		BZ40-007	2082711.552	749549.746	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical under Building 551
		BZ40-007	2082711.552	749549.746	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		BZ40-007	2082711.552	749549.746	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical under Building 551
		BZ40-007	2082711.552	749549.746	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical under Building 551
		BZ41-023	2082775.987	749568.109	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		BZ41-023	2082775.987	749568.109	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical under Building 551
		BZ41-023	2082775.987	749568.109	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical under Building 551
		BZ41-023	2082775.987	749568.109	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		BZ41-023	2082775.987	749568.109	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical under Building 551
		BZ41-023	2082775.987	749568.109	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical under Building 551
		CA41-047	2082760.496	749744.696	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-047	2082760.496	749744.696	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical under Building 551
		CA41-047	2082760.496	749744.696	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical under Building 551
		CA41-047	2082760.496	749744.696	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-047	2082760.496	749744.696	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical under Building 551
		CA41-047	2082760.496	749744.696	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical under Building 551
		CA41-048	2082744.181	749679.713	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-048	2082744.181	749679.713	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical under Building 551
		CA41-048	2082744.181	749679.713	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical under Building 551
		CA41-048	2082744.181	749679.713	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-048	2082744.181	749679.713	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical under Building 551
		CA41-048	2082744.181	749679.713	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical under Building 551
		CA41-049	2082792.301	749633.092	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-049	2082792.301	749633.092	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical under Building 551
		CA41-049	2082792.301	749633.092	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical under Building 551
		CA41-049	2082792.301	749633.092	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-049	2082792.301	749633.092	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical under Building 551
		CA41-049	2082792.301	749633.092	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical under Building 551
		CA41-050	2082775.987	749568.109	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-050	2082775.987	749568.109	Surface Soil	0.0 - 0.5	Metals	6200	6010	Statistical under Building 551
		CA41-050	2082775.987	749568.109	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Statistical under Building 551
		CA41-050	2082775.987	749568.109	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Statistical under Building 551
		CA41-050	2082775.987	749568.109	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Statistical under Building 551
		CA41-050	2082775.987	749568.109	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Statistical under Building 551

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		CA-42-030	2082876.151	749823.087	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Surface Soil	0.0 - 0.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	2.5 - 4.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	2.5 - 4.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	2.5 - 4.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	4.5 - 6.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	4.5 - 6.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	4.5 - 6.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	6.5 - 8.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	6.5 - 8.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	6.5 - 8.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	8.5 - 10.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	8.5 - 10.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Subsurface Soil	8.5 - 10.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-030	2082876.151	749823.087	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Surface Soil	0.0 - 0.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	0.5 - 2.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	2.5 - 4.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	2.5 - 4.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	2.5 - 4.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	4.5 - 6.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	4.5 - 6.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	4.5 - 6.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	6.5 - 8.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comment
		CA-42-031	2082872.467	749814.982	Subsurface Soil	6.5 - 8.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	6.5 - 8.5	VOCs	8260	8260	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	8.5 - 10.5	Radionuclides	HPGe	Alpha Spec	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	8.5 - 10.5	Metals	6200	6010	Biased at Retention Pond
		CA-42-031	2082872.467	749814.982	Subsurface Soil	8.5 - 10.5	VOCs	8260	8260	Biased at Retention Pond
		CA42-032	2082797.716	749804.961	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Biased at Southern Loading Dock
		CA42-032	2082797.716	749804.961	Surface Soil	0.0 - 0.5	Metals	6200	6010	Biased at Southern Loading Dock
		CA42-032	2082797.716	749804.961	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Biased at Southern Loading Dock
		CA42-032	2082797.716	749804.961	Subsurface Soil	2.5 - 4.5	Radionuclides	HPGe	Alpha Spec	Biased at Southern Loading Dock
		CA42-032	2082797.716	749804.961	Subsurface Soil	2.5 - 4.5	Metals	6200	6010	Biased at Southern Loading Dock
		CA42-032	2082797.716	749804.961	Subsurface Soil	2.5 - 4.5	VOCs	8260	8260	Biased at Southern Loading Dock
		CA42-033	2082797.316	749845.369	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec	Biased at Northern Loading Dock
		CA42-033	2082797.316	749845.369	Surface Soil	0.0 - 0.5	Metals	6200	6010	Biased at Northern Loading Dock
		CA42-033	2082797.316	749845.369	Surface Soil	0.0 - 0.5	VOCs	8260	8260	Biased at Northern Loading Dock
		CA42-033	2082797.316	749845.369	Subsurface Soil	2.5 - 4.5	Radionuclides	HPGe	Alpha Spec	Biased at Northern Loading Dock
		CA42-033	2082797.316	749845.369	Subsurface Soil	2.5 - 4.5	Metals	6200	6010	Biased at Northern Loading Dock
		CA42-033	2082797.316	749845.369	Subsurface Soil	2.5 - 4.5	VOCs	8260	8260	Biased at Northern Loading Dock

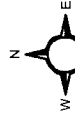
Table 3
Sampling Summary

Category	Total
Number of Sampling Locations	45
Number of Samples	98
Number of Radionuclide Analyses	98
Number of Metal Analyses	98
Number of VOC Analyses	69

Figure 1
IHSS Group 500-2
Location Map

Key

- IHSS 158
- Building**
- Demolished
- Standing
- Industrial Area
- OUBoundary
- Paved Road
- Dirt Road
- Streams



400 0 400 Feet

Scale = 1:9,215

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared for:



Prepared by:



projects/FY2003/500-2/characterization/500-2.apr
October 2003

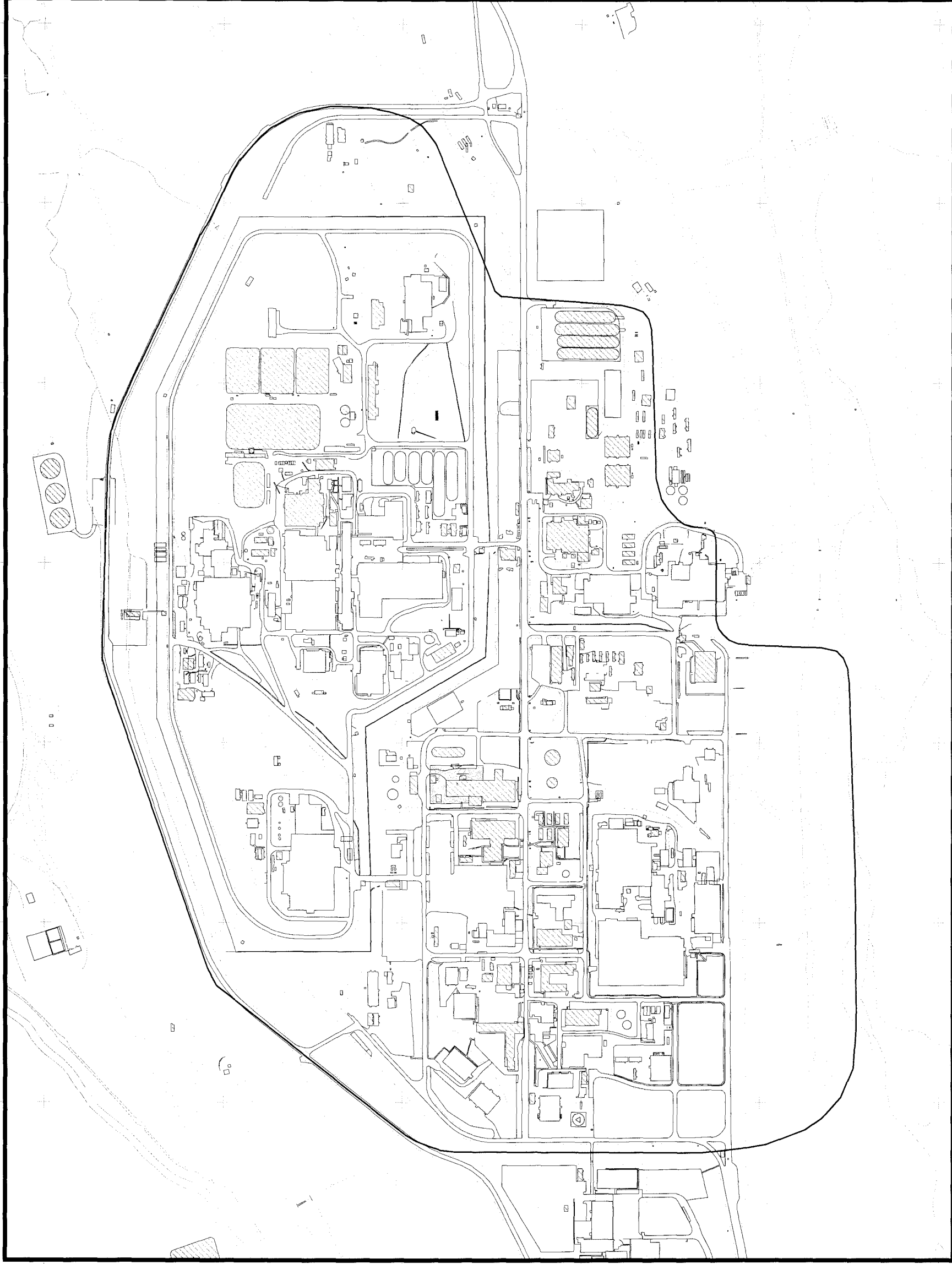


Figure 2
Existing Sample Results
Above Background Means
Plus Two Standard Deviations
or Defection Limit at
IHSS Group 500-2

KEY

IHSS 158

Bldg

Demolished

Standing

Paved Road

Dirt Road

Streams

Sampling result less than ALS

Scale = 1:850

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared for: **KAISER HILL COMPANY**

Prepared by: **RADME**

projects/2003/500-2/rhjaracterization500-2
October 2003

